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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/059,140 | 01/31/2002 | Jarmo Parkkinen | 3502-1004 | 5989 |

466 7590 03/14/2005

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EXAMINER

LU, KUEN S

ART UNIT PAPER NUMBER

2167

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/059,140 | Applicant(s) PARKKINEN, JARMO | |
| | Examiner Kuen S Lu | Art Unit 2167 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendments

1. The Action is responsive to the Applicant's Amendments, filed on September 7, 2004.
2. The Applicant's amendments made to the Abstract is noted and accepted, thereby the Examiner's objection to the specification is withdrawn. Also noted and considered is Applicant's amendments made to the claims for clarity reasons.
3. As for the Applicant's Remarks on claim rejections, filed on September 7, 2004, has been fully considered by the Examiner, please see discussion in the section ***Response to Arguments***, following the Office Action for Final Rejection. Please note the Examiner maintains the same grounds, as set forth in the Office Action for Non-Final Rejection, dated May 28, 2004, 2004, for rejecting the original claims in this Office Action for Final Rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9, 11-21, 23-29, 32-38 and 41-42 are rejected are rejected under U.S.C. 102(b) as anticipated by Orarep (Oracle7™ Server Distributed Systems, Volume II: Replicated Data, Release 7.3, Volume II, February 1996, Part No. A32545-2, ORACLE®, hereafter "Orarep").

As per claims 13, 34, 26 and 1, Orarep teaches "serially aligning database transactions comprising at least two databases coupled to their associated database management systems" by showing two master sites are replicated masters (Page 1-11) for serially aligning database transactions (Page 8-14), "comprising steps of: initiating the first transaction in the first database; linking at least one transaction trigger including attributes into said first transaction; ending said first transaction in the first database" at Page 4-24 where site triggers are created which are invoked in the site A first, "firing at least one said trigger is fired in at least one first database" by database updating, deleting and inserting transactions (Page 4-24), "immediately after the ending and firing steps are completed initiating and at least one second transaction to synchronize data in at least one second database from at least one first database according to at least some of the attributes in the trigger " at Page 4-24 where remote procedures are created and triggered to invoke database transactions at the Site B and vice versa because both Sites A and B are replicated masters. Note the synchronization is a two-way replication data from each of the two sites to each other. At Page 1-13, Fig. 1-6 shows the trigger generated and its attributes stored to the deferred transaction queue before remote procedures call is forwarded.

As per claims 14 and 35, Orarep teaches "the set of data of the second transaction comprises data for performing push-style or push-pull-style synchronization" at Page 1-4 where the master site propagates, or pushes its changes to every other master sites

for the replication group for the master-initiated and at Page 4-26 by manually pushing the changes made at a given master site by calling the EXECUTE procedure to forward any changes made since the last time changes were propagated from the site, either manually or automatically.

As per claims 15 and 2, Orarep teaches "characterized in that the said trigger is a deferred database operation defined for at least one data manipulation operation" at Pages 1-11 and 1-12 where trigger builds deferred procedure call to a packaged procedure at the remote site.

As per claims 16 and 3, Orarep teaches "characterized in that the execution of the second transaction is blocked until the said trigger fires" at Page 1-12 where a first master site database fires trigger as local database change occurs. The trigger builds a remote procedure call to a packaged procedure at site B. It is thus transaction is blocked until the trigger fires and remote procedures is called to a second master site B.

As per claims 17, 36, 27 and 4, Orarep teaches "a database system comprises at least one master database and at least one replica database, the push synchronization data between the master and replica databases is master-initiated and pull synchronization data between the master and replica databases is replica-requested" at Page 1-4 where the master site propagates, or pushes its changes to every other master sites for the replication group for the master-initiated and at Page 4-26 by

manually pushing the changes made at a given master site by calling the EXECUTE procedure to forward any changes made since the last time changes were propagated from the site, either manually or automatically.

As per claims 18, 37, 28 and 5, Orarep teaches “transactionally consistent set of data in a database comprises configuration data” at Page 4-30 when a local database change occurs, a trigger is fired to build deferred calls to generate procedures at the remote site and at Page 8-17 user procedure wrappers to build deferred transactions including configuration data showing the database objects to support the database data changes.

As per claims 19 and 6, Orarep teaches “the device changes its configuration to reflect the changed data right after the data has committed in the database” at Page 1-15 where changes must be replicated to all replicated sites, or rollback occurs to restore the databases back to a consistent state prior to the change.

As per claims 20 and 7, Orarep teaches “the related software processes, like other database server or a client application, are informed about transactional changes by the data management server” at Page 13-15 where DefTran view records all deferred transactions.

As per claims 21 and 8, Orarep teaches "the method executes tasks and operations in a database transaction context" at Page 4-26 where local database change fires triggers to build deferred calls to generate procedures at the remote master sites, procedural replication uses procedures to build deferred transaction and propagation of deferred transactions is controlled by job queue processes. The steps as described are all in the database transaction context.

As per claims 25 and 9, Orarep teaches "transactions are executed in separate database connections or in a shared connection with another said transaction or another transaction" at Page 4-26 where local database change fires triggers to build deferred calls to generate procedures at the remote master sites, procedural replication uses procedures to build deferred transaction and propagation of deferred transactions is controlled by job queue processes.

As per claims 29 and 38, Orarep teaches "at least the second database can be part of a router coupled to the application" at Page 1-2 where a second database is replicated with data changes originated from a first database, and the changed data is available for application connecting to a second database.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained although the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10, 22, 30-31 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orarep (Oracle7™ Server Distributed Systems, Volume II: Replicated Data, Release 7.3, Volume II, February 1996, Part No. A32545-2, ORACLE®, hereafter “Orarep”), as applied to claims 1-9, 11-21, 23-29, 32-38 and 41-42, and further in view of Oranet (Oracle® Advanced Networking Option™, Administrator’s Guide, Release 2.3.3, Part No. A48511-1, ORACLE®, 1996, hereafter “Oranet”).

As per claims 22, 40, 31 and 10, Orarep does not specifically teach “method is compatible with at least one of the following communication specifications: TCP/IP, CDMA, GSM, HSCSD, GPRS, WCDMA, EDGE, UMTS, Bluetooth, Teldesic, Iridium, Inmarsat, WLAN, DIGI-TV and imode”, although Orarep teaches a generic network as a compatible configuration for database replication system at Fig. 1-1 in Page 1-2.

However, Oranet teaches “method is compatible with at least one of the following communication specifications: TCP/IP, CDMA, GSM, HSCSD, GPRS, WCDMA, EDGE, UMTS, Bluetooth, Teldesic, Iridium, Inmarsat, WLAN, DIGI-TV and imode” at Page 14-2 by showing TCP/IP protocol is utilized for database network.

It would have been obvious to one having ordinary skill in the art at the time of the applicant’s invention was made to combine Oranet’s reference into Orarep’s by combining the advanced Oracle network option into replicated database system because the replication system is built on a generic network (Orarep: Page 1-2) and the Oracle network option is implemented on TCP/IP protocol. The combination of the

references would have implemented the replication database system on a most scalable communication protocol known to ordinary skilled in the art.

As per claims 23, 41, 32 and 11, Oranet further teaches "compatible with at least one of the following operating systems and is used in at least one terminal including an application, replica database of the database system Unix, MS-Windows, EPOC, NT, MSCE, Linux, PalmOS, GEOS, VxWorks, Pocket PC and any upgrade of these" at Page 6-3 by describing UNIX as a database server platform.

As per claims 24, 42, 33 and 12, Oranet further teaches "at least one of the following operating systems is used in at least one server including an application master database of the database system: Unix, MS-Windows, VxWorks, NT and Linux and any upgrade of these" at Page 6-3 by describing UNIX as a database server platform.

As per claims 30 and 39, Oranet further teaches "a storage medium is a memory and/or a disk" at Page 17-5 by showing disk or tape is utilized for saving database objects.

Response to Arguments

8. The Applicants' arguments filed on September 7, 2004 have been fully considered but they are not persuasive, for the Examiner's response, please see discussion below.

a). At Pages 14-18, the Applicant assessed the features of Oracle database symmetric replication.

As to the above assessment in item a), the Examiner respectfully agreed.

b). At Pages 18-19, concerning claims 1-9, 11-21, 23-29, 32-38 and 41-42 the Applicant argued OraRep reference does not disclose a transaction trigger including attributes linked into the transaction at the first database. The Applicant also argued that the transactions in local and remote databases are the same.

As to above argument b), the Examiner respectfully disagreed. The replication trigger is defined and fired for transaction making change to the replicated objects. Thereby OraRep does teach transaction trigger as the Applicant's claim language described. Further the trigger so fired is in according to the characteristics of the initiation transaction. The cause and effect linkage between transaction and firing trigger does exist. Also please note the cited reference is to match the language of limitation. It is the Examiner's opinion that the cited does provide the teaching.

c). At Pages 19-20, the Applicant argued OraRep does not teach the procedural type of control sequencing transaction one after another between local and remote replicated databases.

As to the above argument c), the Examiner respectfully disagreed. The section of reference cited is to provide the teaching provided by the claims. Described below is the Examiner's additional comments. Please note a trigger transaction is simply a set of

statements attached to a database object and get executed whenever a triggering event occurs. By this token, the transaction is executed the same regardless of the sources of triggering event coming from a programming procedure or database "operation". Also note the statements may be where procedural control placed. The procedural control may also be performed by the job queue for the remote procedure calls. Also please note a trigger procedure is pre-defined and uniformly executed every time it is triggered. The trigger transaction in a replicated database environment is also implemented through programming effort.

d). At Page 20, the Applicant further argued that the second database does not teach a third transaction.

As to the above argument, the Examiner respectfully disagreed. In a replicated environment, a plurality of transactions taking place after a data replication transaction initiated by a master replication node and executed at local node, for example, acknowledgement and status book-keeping of the transaction.

9. As to dependent claims (2-12), (14-25), (27-33) and (35-42), which directly or indirectly depend on claims 1, 13, 26 and 34, respectively, the Examiner applies the above stated arguments for the respective claim upon which they depend.

10. In light of the forgoing arguments, the 35 U.S.C. 102 rejections for claims 1-9, 11-21, 23-29, 32-38 and 41-42 and 35 U.S.C. 103 rejections for claims 10, 22, 30-31 and 39-40 is hereby sustained.

11. The prior art made of record

U. Oracle7™ Server Distributed Systems, Volume II: Replicated Data, Release 7.3, Volume II, February 1996, Part No. A32545-2, ORACLE®

V. Oracle® Advanced Networking Option™, Administrator's Guide, Release 2.3.3, Part No. A48511-1, ORACLE®, 1996

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. U.S. Publication 2003/0208511

Conclusions

12. THIS ACTION IS MADE FINAL.

The Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

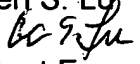
If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose telephone number is 571-272-3574 for faster service.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number is 571-272-4114.

The examiner can normally be reached on 8 AM to 5 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Kuen S. Lu

Patent Examiner

March 8, 2005


Luke Wassum

Primary Examiner

March 8, 2005